



A Picasso paper collage of 1913–14: assessment of fragility and sensitivity to light

Joyce H. Townsend¹ · Charity Fox² · Betty Sacher^{3,4}

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Abstract

The construction and present condition of Picasso's *Bottle of Vieux Marc, Glass, Guitar and Newspaper* 1913, in the Tate collection since 1961, are described. Technical examination, materials analysis and microfading have been carried out on both the support and the collage elements, which include handmade paper, two elements made from *broderie anglaise* pattern pieces ironed onto paper, damaged water-resistant flock wallpaper and old newsprint. These indicate that the collage is not poorly constructed, but is sensitive to light as was expected, especially the support, pattern pieces and wallpaper. Based on the microfading, the current display recommendation for light exposure is 12 months in 4 years, which is half the exposure recommended for typical works on paper at Tate, at 50–80 lx without ultraviolet light.

Keywords Collage · Techniques · Colour change · Microfading · Mock-ups · Assessing vulnerability · Light sensitivity

1 Technical examination and materials analysis

Picasso made *Bottle of Vieux Marc, Glass, Guitar and Newspaper* (Fig. 1) in 1913 in Céret in southern France, one of many paper collages he made around this time. It remained with the artist until it was purchased during World War II by a private collector, before being acquired by Tate in 1961 [1]. It is still in the frame around it in 1961 (Fig. 2), which is similar to the frames used by Picasso's dealer Kahnweiler in the 1950s for other collages of comparable date. The mounting materials have been modified with archivally stable ones, but the frame has been retained because of its status as the earliest frame known to have been used, with the possibility that it was used with Picasso's knowledge and approval.

The work's display and storage history prior to arrival at Tate is therefore undocumented. The several tack-holes or small tears in each corner suggest Picasso pinned up the collage unframed in his own studio(s). He sometimes lived and worked in the south of France, and it could have been exposed to much more visible and ultraviolet light than would be the case in a contemporary museum display. Today several collage elements appear noticeably lower in contrast compared to their appearance in an earlier though black-and-white photograph in the Picasso catalogue by Zervos in 1942 [2], clearly taken before he sold the collage, because it is titled '*Guitare, Verre et Bouteille* 1912, the property of the artist'. The transferred pattern pieces (Fig. 3, see the caption for details) and the dark newsprint on pale paper dominate in that image much more than they do now. The paper support illustrated in Zervos registers as a mid-tone, though the film type

✉ Joyce H. Townsend, joyce.townsend@tate.org.uk | ¹Senior Conservation Scientist, Conservation Department, Tate Britain, Millbank, London SW1P 4RG, UK. ²Paper conservator, Conservation Department, Tate Britain, Millbank, London SW1P 4RG, UK. ³Preventive conservator, Conservation Department, Tate Britain, Millbank, London SW1P 4RG, UK. ⁴Head of Conservation, Museum zu Allerheiligen Schaffhausen, Leiterin Sammlungen, Klosterstrasse 16, CH-8200 Schaffhausen, Switzerland.



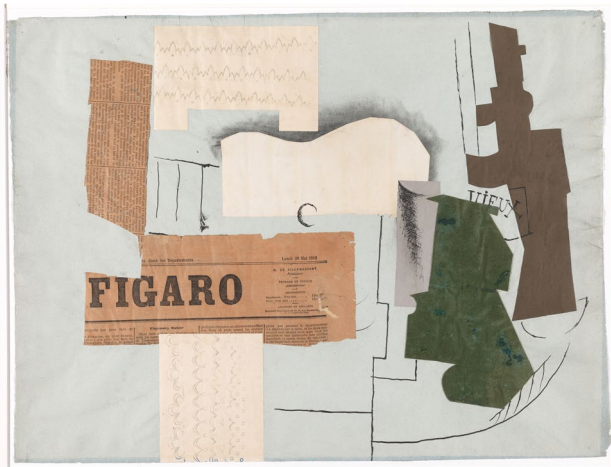


Fig. 1 Pablo Picasso, *Bottle of Vieux Marc, Glass, Guitar and Newspaper / Guitare, journal, verre et bouteille* 1913. Printed papers and ink on paper, 467×625 mm, Tate. The artist retained it until 1941. Purchased 1961. © Sucesión Pablo Picasso. © of the reproductions of works by Pablo Picasso: Pablo Picasso's Estate. VEGAP. Madrid, 2020. Permission to reproduce courtesy of VEGAP, and image © Tate, 2020



Fig. 2 Corner of the frame in use today. Image © Tate, 2019

chosen by the photographer and the printing method used for the catalogue both also play a part in its rendering in the black and white image, making it difficult to infer its intensity then. Judging contrast between elements is realistic as evidence, while judging intensity of colour is not. Some damages that have been retouched on the newsprint collage elements since the photograph was taken can be recognised in the Zervos image, thus proving that the elements were torn or holed early in the life of the work, possibly even before Picasso assembled them for use. Large damaged spots that likely correspond



Fig. 3 The 2 'pattern piece' elements were made using designs for *broderie anglais*, offered free with women's magazines in the 1910-1930s as transparent paper printed with coloured (often blue) ink. These were ironed lightly onto the fabric to be embroidered. This is the lower of the two pieces. Picasso ironed the design onto off-white paper, then adhered this paper to the blue paper support. The frame used since 1961 has protected the lower edge from light exposure, and it has retained the royal blue colour typical of many such pattern pieces. Image © Tate, 2020

to the retouches seen today are just discernible on the green element.

Picasso chose an issue of the newspaper *Le Figaro* from 1883 for these elements, and used parts of this edition in another collage¹ too. He used good quality coloured papers that now appear pale grey and dark brown, for others. The green element is a heavy flocked wallpaper, which analysis shows is made from animal fibres (sheep wool would be likely)² lightly adhered to an opaque substrate that today is a bright turquoise colour, on a transparent white ground applied to paper. The turquoise substrate includes stable inorganic pigments such as lead white, Prussian blue and lead chromate³, in a medium of shellac that would make it somewhat water-resistant, but organic pigments that could be present too are harder to sample or identify. The turquoise substrate seems a rather poor match for a green wallpaper, unless the flock fibres were once much bluer, and hence closer in colour. These fibres are now very loosely attached to the substrate and very brittle, varying in shade from near-colourless to pale green. It is only their dense numbers that give a shaded green effect to the whole surface. This element has sustained damage that might be due to insect attack, and it may have had such holes already when Picasso selected

¹ *Bottle of Vieux Marc, Glass and Newspaper* 1913, Kunstsammlung Nordrhein-Westfalen, Düsseldorf. Information provided to Dr Elizabeth Cowling.

² The fibres were identified using transmitted light microscopy.

³ The pigments were identified using energy-dispersive x-ray analysis applied to a sample examined with a scanning electron microscope, and by using FTIR.

it. These bald spots have been crudely retouched with blobs of blue, then blue-green, and lastly green paint, and this seems far too cavalier in execution to be the work of a collector and owner, still less a conservator. The deep ultramarine shade of the earliest retouches suggests an original deep blue colour, hence, even the turquoise substrate might have become greener. Discussions with a Picasso scholar who has undertaken research into the wallpapers Picasso used in *papiers collés* at this period, and the other found materials he employed on such collages, have been very fruitful [3, 4]. It is clear from her observations that Picasso did employ already-damaged materials in other collages, including wallpaper pieces with tears, and newsprint that must have been already yellowed. Furthermore, other collages he made at this date have a more intense mid blue colour for the support, include blue paper-based elements, and some also retain a pink colour on the reverse of grey paper elements.

The support is a single sheet of handmade, mid-weight, mid-blue, laid Ingres paper of reasonable quality, made by Fabriano, today a light blue. It is well adhered to a non-original secondary support, thus the colour of the reverse is concealed. It includes coloured fibres (mainly blue and lilac, with some red and yellow) likely derived from coloured rags. Picasso drew the shading for the guitar in charcoal before he adhered the collage elements, which therefore all took on the laid texture of the support. No adhesive was squeezed out around the edges in the process, but it can be inferred from examination in ultraviolet light that the newsprint was rapidly but incompletely pasted with adhesive using a wide brush, then flattened, which might imply poor adhesion at some points. Analysis⁴ shows it was a starch-based glue. There is no evidence for pinning with sewing pins (as found in other collages by Picasso), drawing or any other marking for the positions of each element. Then he drew the edge of the table and the 'VIEUX' of the *Vieux Marc* label, with a small number of confident strokes applied in black Chinese-type ink using a pen with a broad nib. The many deformations in the paper support and the laid line ridges in some of adhered papers are due respectively to its restraint by the secondary support and framing with glass, and its original assembly. They do not suggest rolling. Neither the deformations nor the adhesion of individual elements of the collage raise so much concern that loans are refused, or movement restricted, however.

Today, very considerable colour change is evident in several components. The most obvious is in the blue support and the blue ink from the pattern pieces (Fig. 3),



Fig. 4 Detail showing browned newsprint with much lighter retouches (on the left), grey paper not usually seen in Picasso's collages (left of centre), the green flock wallpaper which is multiply retouched, and dark brown paper on the right. Only the black ink can be assumed to be resistant to light. Image © Tate, 2020

obvious by examining the edges protected from light exposure by the frame since at least 1961, or perhaps since the 1940s or 1950s. The support is now a very pale blue and the transferred patterns on white paper, though still readily recognisable as such, are pale grey rather than royal blue, with spots of more recognisable bluish colour. The green element (Fig. 4) and its history are particularly puzzling, and the image in the Zervos catalogue, which renders this element almost black, only shows shading that corresponds to the retouched areas. The broad and assured application of the paints for retouching: dark blue first, then blue-green, and latest of all green (Fig. 5), all in artists' tube paints including Prussian blue, emerald green, lead or barium chromate and rather few extenders, suggests that Picasso himself could well have applied them as the colour of this element became ever more green. The tonality of this collage is very different from others he made at the same period.⁵ Several have a bright mid

⁴ By FTIR.

⁵ *Guitar, Wineglass and Bottle of Vieux Marc*, Céret Spring 1913, Musée national Picasso. Information provided by Dr Elizabeth Cowling.

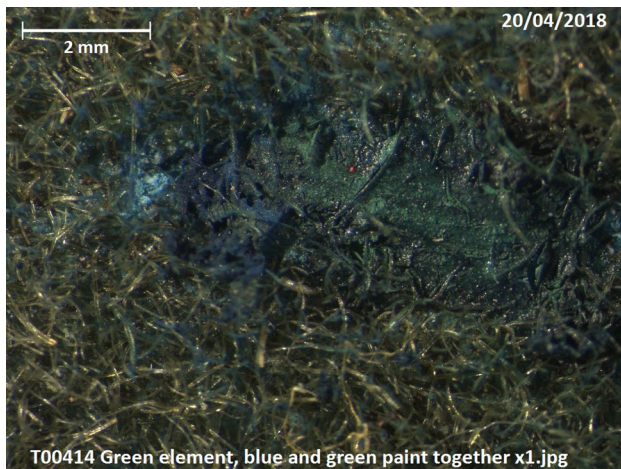


Fig. 5 Micrograph of the green element, showing a spot of the turquoise-coloured substrate on the left side, with retouches in dark blue and later green paint, in the centre. Image © Tate, 2020

blue or greenish mid blue support⁶, or include collage elements of a similarly bright blue. Green and red elements are absent, and some include pink paper. One has the badly faded residues of similarly-used blue *broderie anglais* pattern pieces, scarcely distinguishable now from plain white paper.⁷

The findings from the technical examination and materials analysis of the various components have honed the questions to be pursued through historical and archival research. A key question is whether the original colours of the Tate collage can be inferred from documentary sources, or by other means.

2 Experimental

Mock-ups of the collage are being created, using historically appropriate materials such as: handmade (by one of the authors) and similarly coloured blue paper for the support; newsprint that is several decades old as was Picasso's when he made the collage; newsprint that is now over a century old as these elements are today (if obtainable); coloured modern handmade papers; and iron-on pattern pieces for embroidery from the 1930s. The mock-ups will explore different levels of pressure applied to the paper during fixing of the collage elements, and different ways of working with the inked pattern pieces, since these procedures affect the degree of planar distortion of the support.

⁶ *Bottle and Newspaper* 1913, National Gallery of Ireland. Information provided by Dr Elizabeth Cowling.

⁷ See note 2.

Ways of adhering flocked wallpaper can be explored: ironing on the pre-glued collage element sounds difficult in practice for such a textured material, but if this was done then the heat involved would have contributed to the brittleness of the flocked fibres today. The mock-ups will provide a deeper understanding of the materiality of the artwork and Picasso's working processes. The knowledge of procedures that do and do not give a similar appearance will help to clarify the deterioration processes that affect appearance today, since the mock-ups can be subjected for example, to light ageing with or without ultraviolet light, and storage in the dark following light exposure, in the presence of low-quality, acidic, mounting and framing materials, of the type present before the work came into the collection at Tate.

The constituent parts of the collage have been micro-faded: both altered parts and those protected by the mount in the present frame, to indicate their light sensitivity today, and to explore whether colour shifts have occurred. Microfading is a technique used to assess light sensitivity, by exposing a very small spot of colour to an intense light for a period that would cause colour loss in the three most sensitive ISO Blue Wool Standards (BW). BWs are widely used by museums to express the light sensitivity of materials, with BW3 matching the light sensitivity of many colourants found in works on paper. The colour change in the test area is measured and expressed as BW equivalents. The most light sensitive element of an artwork is typically chosen as the basis for recommending the appropriate light dose and display period. At Tate, it is currently acceptable for works on paper to be exposed for 24 months in 4 years at 50–80 lx under ultraviolet-free light. It follows from this that the recommendation can be made that a work would sustain the same degree of exposure if displayed for 24 months in four years, 12 months in four years or 3 months in four years, according to whether the most light-sensitive component of the work loses colour at the same rate as BW3, BW2, or BW1, respectively. It is generally accepted that microfading tends to underestimate the colour change compared to colour change occurring in low illuminance scenarios. The merit of microfading is that it can flag works that have extreme light sensitivity, and enable preventive measures to be taken.

3 Results and discussion

Preliminary microfading investigated all components of Picasso's collage except the black ink and the charcoal drawing, both known to be lightfast materials. Figure 6 shows the colour changes for different groups of materials, which can be interpreted by looking more closely at the chromaticity coordinates (not presented here). These

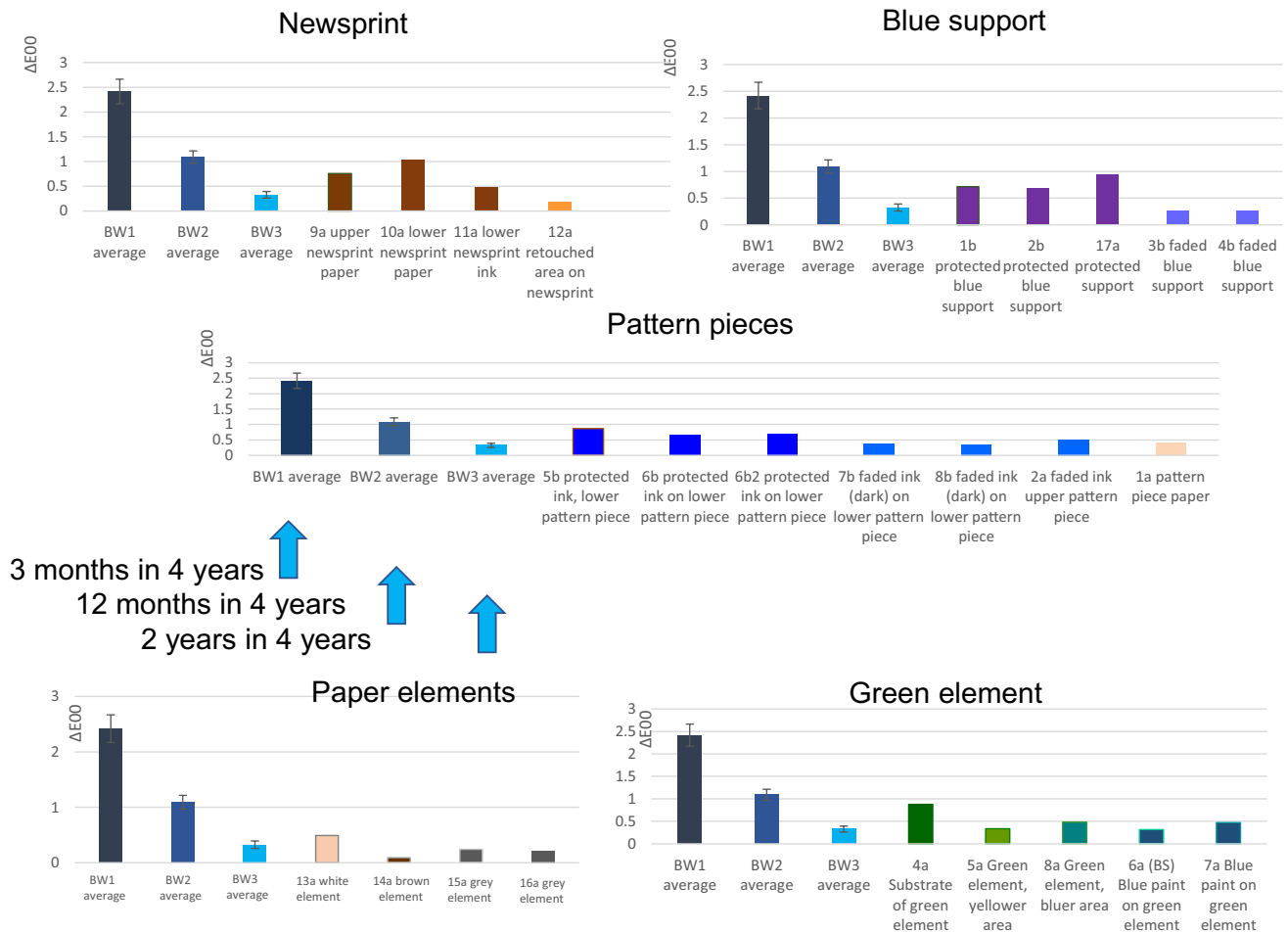


Fig. 6 Preliminary microfading results for the collage. The blue bars at the left side of each bar chart show the measured colour changes successively for Blue Wools 1, 2 and 3 microfaded under the same conditions, which enable a comparison with the colour change undergone by each collage element. Several of these colour changes are the same height as the bar for Blue Wool 3,

the highest aligns with Blue Wool 2, and most of the others fall between. Thus, the most sensitive components are the newsprint and the turquoise substrate of the wallpaper. The protected ink from the pattern pieces is more sensitive than the exposed ink, but the exposed ink and the paper support are both still sensitive to light. Image © Tate, 2020

indicate that the blue support protected from light can lose blue colour and become more red, while the faded paper has the same behaviour but showed a lesser colour change (with a colour difference of 0.26 instead of 0.79, expressed in CIE2000 colour space). From examination with a microscope, this colour shift is in the expected direction: the unfaded side is coloured with mainly blue and some purple fibres, while on the faded side blue fibres have lost colour whereas the purple ones have all survived. The transferred ink from the pattern pieces, when microfaded, loses blue on the side protected from light, while light-exposed areas of this ink lose blue to a lesser degree (the colour differences are 0.74 and 0.41 respectively in Fig. 6, comparable in magnitude to those for the paper support). Due to its texture, the wallpaper element is a difficult subject for microfading, but it appears from a

number of measurements that the green fibres and the turquoise substrate both lose blue and shift towards green. Even the blue and green paints retouching this area have a degree of light sensitivity. The least stable components are the paper support and the ink from the pattern pieces, and the most stable paper is the grey one, the next most stable being the brown one. Neither microfading nor technical examination provided evidence for colour change in these elements. While Fig. 2 shows that the newsprint had the greatest colour change of any component during microfading, this is a less concerning change: yellowed paper or paint in fact commonly loses acquired yellowness when it is microfaded, and thus grows closer to its earlier appearance. The conclusion is that some elements are as sensitive to light as BW2, while others are more resistant to colour change. The recommendation for display would

thus be 12 months in 4 years. In other words, after a year of display at the appropriate display illuminance for works on paper, and also after a studio examination and then a three-venue exhibition that involved travel for a year, it is recommended that the work should not be further displayed for the following three years. (Slightly longer exposure followed by 5 years non-display would achieve the same end, of course.)

4 Conclusions

The collage had already been agreed for an international exhibition in 2019–20, which prompted this study, since such loans with their attendant scholarly interest tend to generate further requests for travel, and additional venues are sometimes added to an exhibition as its planning progresses. Thus, agreement to further loans would compromise the degree to which Tate itself should give public access to the collage in the years that immediately follow these exhibitions.

A better understanding of the deterioration of this collage by Picasso will help to determine the future display protocol for this object, which as the only example in Tate's collection is in demand for display and loan. It will also feed into the lighting policy for works on paper at Tate, as a key case study of a work of proven light sensitivity and with evident colour loss in more than one collage element. This situation begs several questions: can it be judged through microfading and technical examination whether the greatest colour loss has already occurred, leaving a much-altered but more stable work? Or is an already-faded work to be automatically regarded as highly light-sensitive? Even if no colour remained in some elements, to what extent should the brittleness of the flocked wallpaper and the weakness of the low-quality newsprint elements limit its future display? And finally, how can the evidence of original colour best be preserved and understood, and documented in case of further colour change?

From an art historical perspective, a clearer understanding of the materials and techniques involved in making the collage will illuminate the technical processes of the artist, clarify its original appearance and therefore its relationship to other Picasso collages of this date, and bring new readings to the subject, as well as further collaborations between conservation and curatorial professionals.

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Declaration

Conflict of interest The authors declare that they have no conflict of interest.

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